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| 09/977,600 | 10/12/2001 | Wolf-Dietrich Weber | 02998.P018 | 2730 |

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| EXAMINER |
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CHACE, CHRISTIAN

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| ART UNIT | PAPER NUMBER |
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2187

DATE MAILED: 06/23/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,600

Applicant(s)

WEBER, WOLF-DIETRICH

Examiner

Christian P. Chace

Art Unit

2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>2-4,7</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

IDSs received 4 January 2002, 27 June 2002, 24 June 2002, and 30 September 2002 have been considered by examiner. Signed and initialed copies are attached hereto.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 6, and 8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 10 of copending Application No. 09/997,510. Although the conflicting claims are not identical, they are not patentably distinct from each other because they anticipate each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1, 6, and 8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 16, and 23,

of copending Application No. 10/418,370. Although the conflicting claims are not identical, they are not patentably distinct from each other because they anticipate each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1, 6, and 8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/409,806. Although the conflicting claims are not identical, they are not patentably distinct from each other because they anticipate each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1, 6, and 8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 14, 20, and 31 of copending Application No. 09/802,405. Although the conflicting claims are not identical, they are not patentably distinct from each other because they anticipate each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Weber et al (US Patent Application Publication 2002/0129173).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

With respect to claims 1, 6, and 8, tracking a current state of a device is disclosed in claim 1 as a busy signal. The device is either busy or it is not.

Tracking a count of a number of requests which require a particular state is disclosed in claim 3 as the number of credits.

Scheduling requests to a device using the current state of the device, the count of the number of requests that have already been scheduled using the current state, a switch point (number of credits) indicating when to switch state, wherein after the count

reaches the switch point and there are incoming requests having an alternate state to the current state of the device, switching the state of the device to process incoming requests is disclosed in claim 1 as the transaction stream. Once the transaction stream ends, based on the number of credits issued, a busy "state" is entered for that device.

With respect to claims 2 and 7, configuring the switch point is inherent, as a computer must always be told what to do.

With respect to claims 3 and 12, the switch point being adjustable by software is disclosed in claim 6 as the credit signal comprising a coded signal.

With respect to claims 4 and 9, the switch point being dynamically configurable is disclosed in claim 3 as the number of data transfers the target device can accept – this will "dynamically" change based on that number of transfers and that device's "state."

With respect to claims 5 and 11, the device being a DRAM a scheduler type being selected from the group consisting of a DRAM bus turnaround scheduling (?), DRAM page scheduling, and DRAM physical bank switching is disclosed in claim 1 as a thread identifier, which examiner interprets a "thread state" as disclosed in the instant specification on page 8 in paragraph 21, for example. DRAM is disclosed in paragraph 37, for example.

With respect to claim 10, the device comprising a bus and device state comprising a bus direction, said scheduling [being] dependent upon the bus direction is disclosed in claim 1 as a transaction stream that the data transfer between an initiator functional block and a target functional block being part of. In other words, the direction is that from initiator to target.

With respect to claim 13, the device comprising a DRAM (inherently has multiple pages, or rows) and the device state comprising the identity of at least one open page, said scheduling [being] dependent upon the at least one page opened is disclosed in claim 1 as a target functional block that is able to accept data transfers.

With respect to claim 14, the device state comprising the last accessed physical bank, said scheduling being dependent upon the last accessed physical bank is disclosed in claim 1 as the target functional block, which is associated with each transaction stream, that is dependent upon the busy signal, which carries the credit signal which schedules the transfer "dependent" upon the target functional block.

Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Strongin et al (US Patent #6,510,497).

With respect to independent claims 1, 6, and 8, a method for scheduling access to a device is disclosed in the title.

Tracking a current state of the device is disclosed in column 11, lines 45-50.

Tracking a count of a number of requests which require a "particular" state is disclosed in column 11, lines 55-60, as the number of requests issued and/or amount of time elapsed. Both "particular states" would inherently require a count of some sort.

Scheduling requests to a device using the current state of the device, the count of the number of requests that have already been scheduled using the current state, a switch point (number of pending operations) indicating when to switch state, wherein after the count reaches the switch point and there are incoming requests having an alternate state to the current state (a different bus direction or a different open bank of

DRAM) of the device, switching the state of the device to process incoming requests is disclosed in column 12, lines 20-35.

With respect to claims 2 and 7, configuring the switch point is disclosed in column 12, lines 22-33, which is the number of pending requests. As this number changes, the switch point is re-configured.

With respect to claims 3 and 12, the switch point being adjustable by software is disclosed in column 15, lines 5-10.

With respect to claims 4 and 9, the switch point being "dynamically" configurable is discussed supra with respect to claims 2 and 7. "Dynamic" simply means it changes.

With respect to claims 5 and 11, the device being a DRAM is disclosed in column 13, line 8, for example. A scheduler type being selected from the group consisting of a DRAM bus turnaround scheduling (?), DRAM page scheduling, and DRAM physical bank switching is disclosed in column 14, lines 20-60.

With respect to claim 10, the device comprising a bus and the device state comprising a bus direction, said scheduling being dependent upon the bus direction is disclosed in column 11, lines 64-65.

With respect to claim 13, the device comprising a DRAM with multiple pages and the device state comprising the identity of at least one open page, said scheduling being dependent upon the at least one page opened is disclosed in column 11, lines 5-10.

With respect to claim 14, the device comprising a DRAM with multiple physical banks and the device state comprising the last accessed physical bank, said scheduling dependent upon the last accessed physical bank is disclosed in column 15, lines 29-34.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian P. Chace whose telephone number is 703.306.5903. The examiner can normally be reached on 9-4-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 703.308.1756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'C. P. Chace', with a long horizontal flourish extending to the right.

Christian P. Chace